

Abstract

An interconnection structure for interconnecting circuitry on a first conductive layer to circuitry on a second conductive layer is provided. The interconnection structure of the present invention comprises a signal conductor via surrounded by a plurality of ground vias. The plurality of ground vias shield the signal conductor via, thus providing electrical isolation for the conductor via from the rest of the circuitry. One feature of the present invention is that the plurality of ground vias can be modified, adjusting their diameters and their placement relative to the signal conductor via, in order to affect the overall characteristic impedance of the interconnection structure. This feature is useful when propagating high frequency signals between signal traces on different conductive layers of a printed circuit board. In view of the high frequencies used in today's wireless communication systems, the interconnection structure proposed aids in the practical implementation of radio frequency modules by mitigating the effects of impedance discontinuities ordinarily present at signal trace-to-via transition regions.